

*Amendments to the Specification*

Please replace paragraph [0006] of the specification with the following:

According to the preferred embodiments, a charge pump circuit to supply current to a controlled oscillating circuit is disclosed. The charge pump circuit includes a first switch comprising a first state. The first switch is coupled to a gate of an output diode. The charge pump circuit also includes a second switch comprising a second state opposite from the first state, the second switch coupled to ~~a source~~ an anode of the output diode. The second switch provides a charge up current to the output diode when the second state comprises an ON state.

Please replace paragraph [0008] of the specification with the following:

According to the preferred embodiments, a charge pump circuit coupled to an oscillating circuit also is disclosed. The charge pump circuit includes a current source. The charge pump circuit also includes a source switch coupled to the current source to supply a charge up current. The charge pump circuit also includes an output diode having ~~a source~~ an anode coupled to the source switch. The output diode receives the charge up current. The charge pump circuit also includes a gate switch coupled to a gate of the output diode to form a circuit to hold a bias voltage from the gate.

Please replace paragraph [0009] of the specification with the following:

According to the preferred embodiments, a method for adding a charge up current also is disclosed. The circuit includes a first setting means for setting a first switch coupled to a gate of an output diode to a first state. The method also includes second setting means for setting a second switch coupled to ~~a source an anode~~ of the output diode to a second state. The second state is opposite the first state. The second switch provides a charge up current to the output diode.

Please replace paragraph [0010] of the specification with the following:

According to the preferred embodiments, a circuit for adding a charge up current also is disclosed. The circuit includes a first setting means for setting a first switch coupled to a gate of an output diode to a first state. The circuit also includes second setting means for setting a second switch coupled to ~~a source an anode~~ of the output diode to a second state. The second state is opposite the first state. The second switch provides a charge up current to the output diode.

Please replace paragraph [0038] of the specification with the following:

Charge up circuit 220, in summary, includes a first switch 210 having a first state and coupled to a gate of output diode 208. Charge up circuit 220 also includes second switch 212 having a second state that is opposite from the first state of switch 210. Second switch 212 may be coupled to the ~~supply anode~~ of output diode 208 and supplies charge up current 214 to offset current 252 while first switch 210 is in an OFF state.

Please replace paragraph [0039] of the specification with the following:

Current source 204 is also coupled to charge down circuit 206 for supplying charge down current 230. Charge down circuit 206 includes switch 222 and switch 224, which act like switches 210 and 212 discussed above. When switch 224 is in an ON state, charge down current 230 may be supplied to output diode 226. Output diode 226 may be similar to output diode 208. Switch 222 may be in an OFF state as charge ~~up~~ <sup>down</sup> current 230 is supplied. When switch 224 is in an OFF state, charge down current 230 may not be supplied, and switch 222 may be in an ON state. Switches 222 and 224 may turn ON and OFF instantaneously. Switch 222 may be referred to as a gate switch, and switch 224 may be referred to as a source switch.

Please replace paragraph [0041] of the specification with the following:

When current source is turned OFF, switch 224 may revert back to an OFF state and the charge for charge down current 230 may be held by capacitance 228 until switch ~~230~~ <sup>224</sup> is turned ON again. Current source 204 may operate when signal 240 from phase/frequency detector 104, as shown in FIG. 1, indicates the need to provide charge down current 230.

Please replace paragraph [0044] of the specification with the following:

Step 304 executes by activating a current supply within the charge pump circuit.

The current supply may be coupled to two switches also within the charge pump circuit.

The current supply generates current to be used as the charge up current. Step 306 executes by setting a first switch within the charge pump circuit. The first switch is set to a state, such as ON or OFF. Step 308 executes by setting the second switch to a state opposite to the state of the first switch. When providing the charge up current from the charge pump circuit, the state of the second switch is set to ON. Thus, the state of the first switch may be OFF. Both the first and second switches may be coupled to an output diode. The first switch may be coupled to a gate of the output diode, while the second switch may be coupled to the sourcee anode of the output diode. The output diode, in turn, is coupled to the input of the oscillating circuit.

Please replace the abstract of the specification with the following:

A charge pump circuit ~~circuit~~ that supplies current to an offset current of an output signal for an oscillating circuit is disclosed. The charge pump circuit ~~circuit~~ includes a first switch and a second switch. The first switch is coupled to a gate of an output diode that provides a charge up current from the charge pump circuit ~~circuit~~. A second switch is coupled to ~~a sourcee an anode~~ of the output diode and supplies the charge up current to the output diode. The first switch comprises a first state and the second switch comprises a second state that is opposite the first state. Thus when the second switch is on, the first switch is off. The charge pump circuit ~~circuit~~ also includes a capacitance to hold a bias voltage when the first switch is off.